

Application Ser. No. 10/662,158

FIREWORKS ARTILLERY SHELL

Amendment Responsive to the Office Action dated: July 14, 2004

Remarks

This amendment is submitted in response to the Office Action dated July 14, 2004. Claims 1 and 4-7 remain in the application. Claims 2 and 3 have been cancelled, their limitations now being included in claim 1, and claims 8 and 9 which have been withdrawn pursuant to the restriction requirement of April 26, 2004. No claims have been allowed.

The present application is entitled "fireworks artillery shell" but as is noted in the first page of the specification, the use of the term "fireworks" means "consumer fireworks." This has been re-emphasized in the text of claim 1. The significance is important, because in contrast to many pyrotechnic devices for military or other uses, there are significant limitations imposed on consumer fireworks in order to make them suitable for the ordinary consumer. These include limitations on the amount of explosives which may be contained therein. Thus, in the case of what is known as a fireworks artillery shell, the total amount of the explosives must not only lift the shell skyward but also produce the desired entertainment effect. In this regard, a significant challenge is presented to those concerned with providing a useful and entertaining article which can be inexpensively produced, designed to avoid injury when properly used, is sufficiently light in weight to be propelled skyward by a small lifting charge, and produces an entertaining effect upon final ignition and detonation given the constraints imposed thereon.

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The present invention is in these respects different from the prior art cited and relied upon in the initial rejection set forth in the first office action. Most, if not all of the prior art patents cited in support of the refusal would not be consulted or considered by those of ordinary skill in the art concerned with developing a consumer fireworks artillery shell. The Buck Canadian patent no. 674645 shows a warfare device for use with flame-throwers and smoke generating agents which is a complex device having a pull-actuated primer, and significantly does not include a lifting charge which lifts the casing. U.S. Patent No. 2,103,936 to Decker shows a different type of device wherein the lifting charge is not included in the casing of the shell, but rather received in the base of the launch tube 10 above the base 12. This is because it is desireable that the stationary mortar tubes be capable of fusible interconnection as shown in Figs. 3 and 4, and thus the mortar is spent upon ignition. The 1,299,217 patent to Pain shows a complex signal rocket or military device (see col. 2, lines 44-45 disclosing the use of dynamite as a detonating charge) and not a consumer product. Here, there is no sealing member of substantially incombustible material across the casing above an effects charge, but quite the opposite, an ejecting charge 16 is used.

Similarly, the secondary references are not concerned with the field of endeavor of the applicant herein. For example, the Pearsall 1,907,863 patent is concerned with a safety fuse for blasting and teaches that the exterior cover of a fuse or charge of paper may be covered with waterproof material (page 1, lines 75-85, page 2, lines 68-99). The Maretti device is an underwater rocket for use by skin divers and is fired underwater. Such is incompatible with the concept of the present invention in numerous respects, beginning with the need of a user of consumer fireworks to

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use ordinary means to light the ignition fuse. The Rouse 6,412,416 patent is a military device based on an M2A1 ammunition case and does not consider lifting the casing by a lift charge but rather a military-type cartridge for use as a propellant.

In contrast, claim 1 calls for a consumer fireworks artillery shell. As consumer fireworks, the present invention is far different in use and application from the cited references with the exception of the '936 patent to Decker, which is manifestly structurally different. In order to reinforce and further incorporate the limitation of the fact that this is a consumer firework, applicant has amended claim 1 to call for a limitation with respect to the weight of the lifting charge and the bursting charge of the effect charge. By including these limitations in the claims, applicant has given life and meaning to the limitation that this is a consumer firework product.

In addition, the present invention as called for in claim 1 is clearly different in construction than the cited references, and especially so as amended. For example, the present invention now calls for the casing to be paper, which is necessary to make an efficient and practical product, and to be able to biologically decompose in contrast to the other cited references. It further includes a paper wrapper which substantially encloses the casing. The lifting charge is adapted to propel the fireworks skyward, whereas in the Decker, Buck, Pearsall, Maretti and Rouse patents, the propellant charge is not positioned within the casing and/or not adapted to propel the casing into the air. In regard to the skyrocket of Pain, the present invention is quite different in that a sealing material is positioned above the effects charge, and the Pain skyrocket lacks a paper wrapper which substantially encloses the casing. The use of such a wrapper helps to protect the lifting charge which

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is not the case in the skyrocket of Pain. Moreover, it may be seen that the Pain patent is directed to a military type signal rocket having substantially different charge weights than would be applicable to a consumer firework product and as called for in the specific recitation of the present invention.

Pain further lacks the combination of a paper wafer and a sealing material as now called for by claim

1. Finally, although Pain shows an external fuse connecting the propellant and the ejecting charge, but the use of this fuse to ignite the propellant charge would render the Pain skyrocket inoperative -- it would cause the ejection charge and the propellant to ignite almost simultaneously and thereby explode on the ground. In contrast, applicant calls for an ignition fuse leading to the lift charge, and a separate fuse leading from the lift charge to the effects charge.

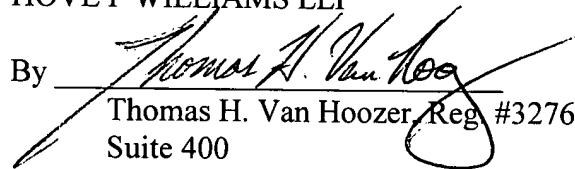
Thus, the present invention is directed to a simple consumer fireworks product and the additional limitations to claim 1 serve to further define the present invention to its specific field of use and application and distinguish it from the prior art. Accordingly, applicant respectfully submits that the present invention defines over the art of record and should be passed to allowance. If the examiner has further questions which may be resolved by a telephone conference, they may be addressed to the undersigned at 1-800-445-3460. Applicant is submitting herewith a Petition for a Two Month extension of time to respond to the Office Action together with a check to cover the fees for such extension.

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Should any additional fees be required, they may be charged to Deposit Account 19-0522.

Respectfully submitted,

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